

SAFETY COMMISSION AGENDA STATEMENT

Item 7
Meeting Date 5/01/13

ITEM TITLE: Resolution of the Safety Commission of the City of Chula Vista recommending that the Chula Vista City Council increase the existing speed limit on Brandywine Avenue between Olympic Parkway and East Palomar Street from 35 mph to 40 mph, and that Schedule X of the register maintained in the Office of the City Engineer be revised to include this revised speed limit

SUBMITTED BY: Principal Civil Engineer *FXR*

Staff completed an Engineering and Traffic Survey for a segment of Brandywine Avenue in accordance with the California Vehicle Code, which mandates that a speed survey be completed and updated every seven years for each street with a posted speed limit within the City. Based on the results of this speed survey, staff has determined that the speed limit on Brandywine Avenue between Olympic Parkway and East Palomar Street should be increased from 35 mph to 40 mph (see Attachment 1, Location Plat).

RECOMMENDATION: That the Safety Commission concur with staff and recommend the Chula Vista City Council increase the existing speed limit on Brandywine Avenue between Olympic Parkway and East Palomar Street from 35 mph to 40 mph, and that Schedule X of the register maintained in the Office of the City Engineer be revised to include this revised speed limit.

DISCUSSION:

Currently, there are 35 mph posted speed limit signs on Brandywine Avenue between Olympic Parkway and East Palomar Street.

City staff completed an Engineering and Traffic Survey along a segment of Brandywine Avenue in accordance with the California Vehicle Code, which indicates that the posting of speed limits be determined by an Engineering and Traffic Survey (see Attachment 2). As described in the California Vehicle Code, the survey shall include:

- (1) Prevailing speeds as determined by traffic engineering measurements;
- (2) Accident records;
- (3) Traffic/roadside conditions not readily apparent to the driver.

These roadway characteristics are then used to help determine an appropriate speed limit. In addition, the Manual on Uniform Traffic Control Devices (MUTCD) states that the speed limit

shall be established at the nearest 5mph increment of the 85th percentile speed. In addition, if the 5mph reduction procedure is applied, the Engineering and Traffic Survey shall document in writing the conditions and justification for the lower speed limit and be approved by a registered Civil or Traffic Engineer.

Speed limits established on the basis of the 85th percentile speed conform to the consensus of those who drive the street as to what speed is reasonable and safe, and are not dependent on the judgment of one or a few individuals. Speed limits posted higher than the 85th percentile speed are not generally considered reasonable and safe while speed limits posted below the 85th percentile typically do not facilitate the orderly movement of traffic. Only when roadside development results in traffic conflicts or unusual conditions not readily apparent to drivers may speed limits be further reduced.

The Engineering and Traffic Survey determined that the 85th percentile speed on Brandywine Avenue between Olympic Parkway and East Palomar Street is 39 mph. Per speed limit establishment protocol, this was measured during the off-peak hours under normal driving conditions, as required per the MUTCD.

Physical Conditions

Brandywine Avenue between Olympic Parkway and East Palomar Street is 2,411 feet (0.46 miles) long and 64'-80' wide curb-to-curb with a striped median. The street is classified as a 4-Lane Major. The street has bike lanes on both sides of the road. There is no parking allowed along the entire segment, except along 200' of the easterly side of Brandywine Avenue north of Olympic Parkway. This is to accommodate three (3) single-family dwellings fronting Brandywine Avenue with direct driveway access.

The following table describes the existing conditions along the segment of Brandywine Avenue:

Segment Limits	Brandywine Avenue between Olympic Parkway and East Palomar Street
Length/Width	2,411 feet (0.46 miles)/ 64'-80' wide curb to curb with a striped median
Classification	4-Lane Major
ADT (Year)	12,503 (2008)
Exist. Speed Limit	Posted 35 mph
85th% Speed	39 mph between Olympic Parkway and East Palomar Street
Number of Lanes	4 total lanes (2 per direction).
Striping	4 lanes, right-turn and left-turn pockets, crosswalks, limit lines and bike lanes.
Parking and Bike Facilities	No parking allowed with bike lanes, except along 200' of the easterly side of Brandywine Avenue north of Olympic Parkway.
Land Use	Residential.
Horizontal Alignment	A horizontal curve with a radius of 1100 ft over a length of 792 ft produces a design speed of 55 mph.
Vertical Alignment	A crest vertical curve over a distance of 500 ft with a -2.00% to -7.00% grade difference produces a design speed of 45mph.

Accident Rate: Segment / State	The accident rate at this segment is 0.48 (accidents per million vehicle miles) and is lower than the rate of 1.93 for similar roadways in the State of California (2010).
Special Conditions	Fire Station located within the segment, 3 single-family dwellings with direct driveway access 270' north of Olympic Parkway.

CONCLUSION:

When speed limits are appropriately established (set at the 5 mph increment of speed in the upper half of the normal pace of traffic (85th percentile)) the following objectives are achieved:

- Meaningful, unambiguous enforcement
- Voluntary public compliance
- Clear identification of the unreasonable violator
- Elimination of unjustifiable "tolerances" of higher speed travel

Based on the 85th percentile speed of the roadway, as well as a low collision rate outlined in the Engineering/Traffic Survey, staff has determined that the speed limit on Brandywine Avenue should be increased to 40 mph from Olympic Parkway and East Palomar Street.

Should the City Council establish the proposed 40 mph speed limit, Schedule X of the register maintained in the office of the City Engineer would be amended to reflect the revised speed limit as follows:

10.48.020 Schedule X – Established Speed Limits in Certain Zones – Designated			
Name of Street	Beginning At	Ending At	Proposed Speed Limit
Brandywine Avenue	Olympic Parkway	East Palomar Street	40 mph

FISCAL IMPACT:

The establishment of the speed limit would require the posting of new speed limit signs and speed limit legends and warning signs. This work will be funded by an existing Traffic Engineering Capital Improvement Project, TF-332, Signing and Striping Program.

Attachments: Location Plat
Speed Survey



SPEED LIMIT - ENGINEERING/TRAFFIC SURVEY

STREET: Brandywine Avenue
LIMITS: Olympic Parkway to East Palomar Street
Length of Segment (ft): 2,411' (0.46 miles)
Existing Posted Limit (mph): 35 MPH

SUMMARY OF SPEED SURVEYS

Segment: East Palomar Street - Ingram Street
Date Taken: 2/26/2013
No. of Vehicles on Sample (cars): 100
85th Percentile (mph): 39 mph
Range of Speeds Recorded (mph): 32 - 41 mph

ROADWAY CHARACTERISTICS

Width (ft): 64' - 80' with a striped median.
Total No. of Lanes: 4 lanes (2 per direction)
Horizontal Alignment: Horizontal curve with a radius of 1100' over a distance of 792' along the centerline, produces a design speed of 55 mph.
Vertical Alignment: Crest vertical curve located south of E Palomar Street over a distance of 500' along the centerline with a -2.00% to -7.00% grade difference produces a design speed of 45 mph.

TRAFFIC CHARACTERISTICS

Average Daily Traffic: 12,503 (2008)
On-Street Parking: Allowed along the 200' of the easterly side of Brandywine Avenue north of Olympic Parkway.
Special Conditions: City of Chula Vista Fire Station located at 1410 Brandywine Ave. Bike Lanes along both sides of the segment. Three single family dwellings with direct driveway access located on the east side of the segment at Olympic Parkway. Retail center located directly at the north of the segment.
Accident History: The accident rate at this segment is 0.48 (accidents per million vehicle miles) which is lower than the rate of 1.93 for similar roadways in the State of California (2010).

SURVEY RESULTS

Study was Prepared by: Ben Herrera
Date: 12/19/2012
Recommendation: Increase speed limit to 40 mph based on the 85th percentile speed and roadway characteristics.
Date Recommendation Approved:
By: Muna Cuthbert , P.E.
Approved Speed Limit (mph): 40 mph
Per CVC 40802, Survey Expires: 2/26/2020

CITY OF CHULA VISTA - VEHICLE SPEED SURVEY

SEGMENT UNDER STUDY: Brandywine - Olympic Parkway to East Palomar Street

DATE: 2/26/2013 SURVEY SITE: 1000' S of E. Palomar St POSTED SPEED: 35 mph
(E. Palomar St - Ingram St.)

TIME START: 2:20 PM TIME END: 2:52 PM WEATHER: Sunny/Clear

MPH	DIRECTION: <u> </u> NB <u> </u> = O <u> </u> SB <u> </u> = /																				TOTAL	%	CUM %	
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35	\	\	\	\	O	O	O	O	O	O	O	O									12	12	21	
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